

# RCI PRO ADAPTER MODEL 440



The RCI Model 440 is a two channel amplifier system for the interface of semi-professional audio equipment to +4dBm professional equipment. The unit is comprised of two amplifier and attenuator sections.

The amplifiers are designed to boost a low level signal, -20 to +3dB, up to a balanced +4dBm level; the unit has rear panel trim controls to vary the gain up to +8dBm to meet broadcast standards. Additionally, the amplifiers provide an impedance matching characteristic necessary to avoid overloading the -10dB equipment. The attenuators reduce the +4dBm level to a -10dB nominal level for the semi-professional equipment.

The 440 takes advantage of the low noise and distortion characteristics of today's plug-in integrated circuits. With channel separation better than 65dB and a slew rate of 13 volts per micro-

second, the unit is remarkably transparent. The output can be shorted for prolonged periods without damage.

Output maximum for the model 440 is +24dBm allowing 20dB of headroom at a +4 nominal output. An unbalanced version, model 240 is available with a maximum output level of +19dBm.

The compact size of the 440, 1 3/4" x 8 1/2" x 5 3/4" deep, allows it to be placed in tight quarters. The chassis construction allows a number of mounting options, including EIA rack mounting. The rack mount adapter, RM-140, allows two units to be mounted side by side in one rack space.

Connection of the 440 is via standard RCA jacks to match semi-professional equipment and barrier strips for professional +4dBm equipment. An XLR version, the 440X, is also available.

## FEATURES

- 20 to 20KHz response,  $\pm 1/2$ dB
- +4 or +8dBm Balanced Outputs
- Adjustable Gain
- Low Noise and Distortion
- Preset Attenuators
- Compact Half-Rack Size
- Internal Power Supply

## SPECIFICATIONS

### AMPLIFIER SECTION

RESPONSE:	20 to 20KHz, $\pm 2.5$ dB
INPUT:	30K ohm, unbalanced
OUTPUT:	85 ohm, balanced
THD:	.1%, 30-20KHz, .01% mid-band
SLEW RATE:	13V per microsecond
SEPARATION:	Better than 85dB @ 1KHz 65dB @ 10KHz
NOISE:	76dB below +4dBm
CLIPPING:	+25dBm into 600 ohms

### ATTENUATOR SECTION

INPUT:	50K ohm bridging
OUTPUT:	3K ohm
ATTENUATION:	24dB

### PHYSICAL

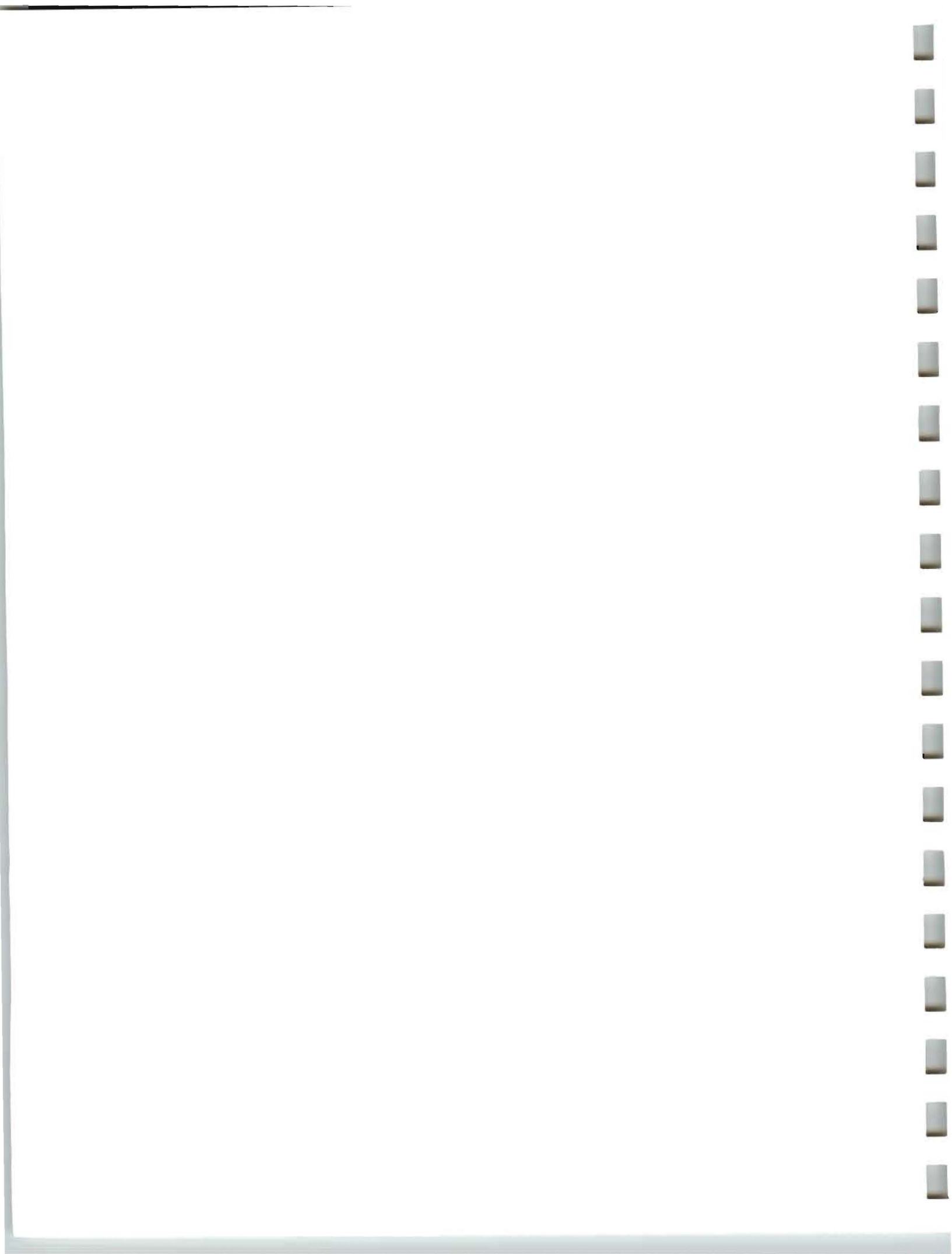
SIZE:	44(H) x 216(W) x 147(D)mm (1.75" x 8.5" x 5.75")
WEIGHT:	2.2Kg (3 lbs.)
POWER:	115 VAC, 60Hz, 10 Watts
FINISH:	Black anodized chassis
ACCESSORY:	RM 140, Rack Mount Adapter

Specifications are subject to change without notice.  
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**RCI**

ENGINEERED AUDIO SYSTEMS

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### OPERATING INSTRUCTIONS

**UNPACKING:** Carefully examine the contents of shipping container for signs of physical damage which could have occurred in transit. If damage is evident, save the shipping container and contact the carrier to make a claim for damage.

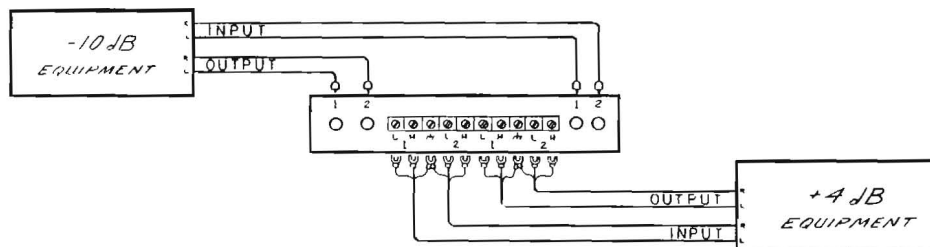
**INSTALLATION:** Rack mounting of the Pro Adapter is easily accomplished by using the RM-140 rack mount panel. Use the two hex head screws in the front of the Pro Adapter to mount it to the RM-140 panel. Two units will fit on the RM-140 in one EIA panel space.

The Pro Adapter has a wide ambient temperature operating range ( $0^{\circ}$  to  $50^{\circ}\text{C}$ ). If it is placed near other heat producing equipment however, proper ventilation should be provided. While the circuitry is shielded against moderate electro-magnetic fields, in following good engineering practices, avoid positioning your unit next to power transformers, motors, etc. Refer to the diagram for proper connection.

**GROUNDING AND SHIELDS:** In order to prevent ground loops due to multiple paths to AC earth ground, we recommend that the Pro Adapter and the equipment to which it is interfacing all be grounded at the same point. Further, the shields of +4 dB cables should be connected at only one end.

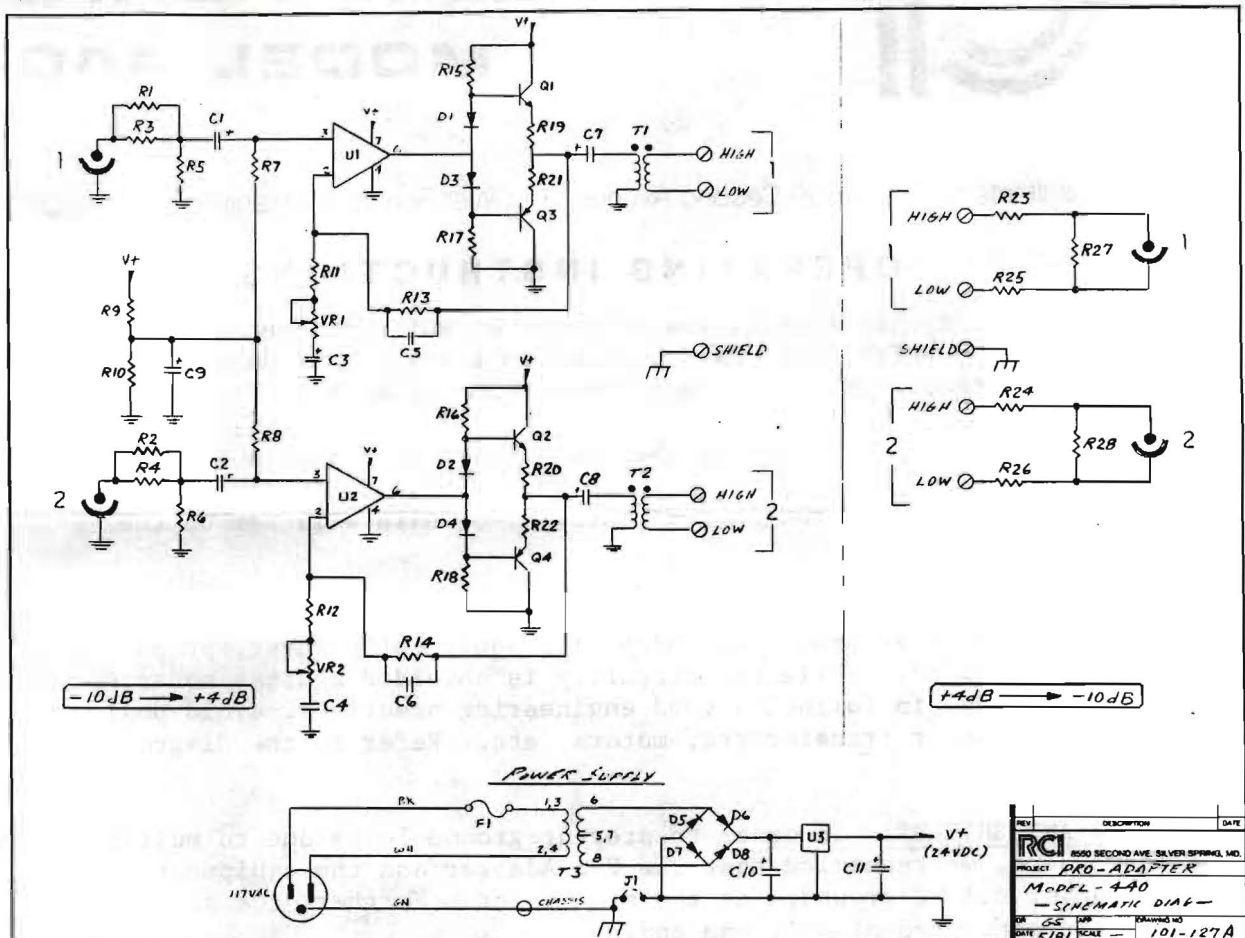
**OPERATION:** Most semi-pro and consumer equipment which are categorized as -10dB equipment actually operate at a lower input and output level (typically -16 dB). Some however operate as high as 0 dB. In order to cover the range of -10 dB equipment such that a precise +4 or +8 dB level is achieved, recessed gain trim controls (screwdriver adjustable) are located at the rear panel. The extreme CW position amplifies a -20 dB signal to +4 dB, while the extreme CCW position amplifies a -9 dB signal to +4 dB. For higher input levels remove the cover of the 440 and clip out R1 and R2 (22K ohm; red, red, orange, gold). With these resistors removed the CW position of the gain trim amplifies a -8 dB signal to +4 dB, while the CCW position amplifies a +3 dB signal to +4 dB. Level calibration may be accomplished either by setting the trim control for a known value or by utilizing known references such as a precision alignment tape, or oscillator and AC Volt Meter.

There is no adjustment to the attenuator section which drops a fixed level of 24 dB from a balanced source or 18 dB from an unbalanced source. The difference is due to the effective short across one leg of the balanced pad with an unbalanced source. Adjustment of this dropped level may be made with the input level control of the -10 dB equipment. In a cassette deck, for example, this would be the record level control.



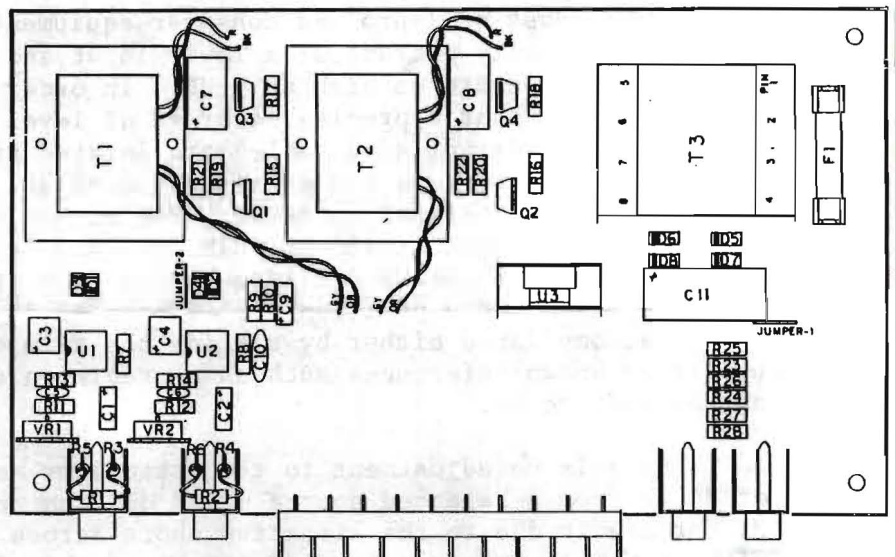


# MODEL 440



## SYMBOL DESCRIPTION TYPE

R1,R2	RESISTOR 1/4W, 5%	22K
R3,R4	RESISTOR 1/4W, 5%	100K
R5,R6	RESISTOR 1/4W, 5%	11K
R7,R8	RESISTOR 1/4W, 5%	100K
R9,R10	RESISTOR 1/4W, 5%	33K
R11,R12	RESISTOR 1/4W, 5%	1.2K
R13,R14	RESISTOR 1/4W, 5%	20K
R15-R18	RESISTOR 1/4W, 5%	2K
R19-R22	RESISTOR 1/4W, 5%	15 ohms
R23-R26	RESISTOR 1/4W, 5%	22K
R27,R28	RESISTOR 1/4W, 5%	3.3K
C1,C2	CAPACITOR	22uF, 25V
C3,C4	CAPACITOR	47uF, 25V
C5,C6	CAPACITOR	120pF, 1000V
C7,C8	CAPACITOR	250uF, 25V
C9	CAPACITOR	22uF, 25V
C10	CAPACITOR	470uF, 40V
C11	CAPACITOR	.1uF, 100V
D1-D4	DIODE	1N914
D5-D8	DIODE	1N4003
F1	FUSE	3AG, 1/8A, 250V



Q1,Q2	TRANSISTOR	MPS U06
Q3,Q4	TRANSISTOR	MPS U56
T1,T2	TRANSFORMER	7560B
T3	TRANSFORMER	20024
U1,U2	INTEGRATED CIRCUIT	5534
U3	INTEGRATED CIRCUIT	7824
VR1,VR2	VARIABLE RESISTOR	5K LINEAR